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EXAMINER

DUNLAP, JONATHAN M

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/583,195	Applicant(s) DECOSTER, YVES	
	Examiner Jonathan Dunlap	Art Unit 2855	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 June 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 1 and 7 are objected to because of the following informalities:
2. "a control unit...from said plurality of electrodes, determined" should be rewritten as "a control unit...from said plurality of electrodes, determine". Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. Claims 1-5 and 12-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Fulton et al. (NPL - Body-Support Pressure Measurement Using Electrical Impedance Tomography).

Considering claim 1, discloses a vehicle seat equipped with a seat occupancy detection device, the seat occupancy detection device comprising (**Abstract**):

- a sensing layer associated to a seating surface of the vehicle seat, said sensing layer having at least one electrical property varying in response to a pressure and/or deformation applied to said sensing layer (**Abstract; Pressure Measurement Method**),

- a plurality of electrodes, said electrodes being associated to said sensing layer only at a periphery of a sensing area (**Pressure Measurement Method, 28 on the periphery**); and
- a control unit connected to said electrodes, said control unit being configured to select a pair of electrodes from said plurality of electrodes, determine at least one electrical property between pairs of electrodes selected from said plurality of electrodes, and evaluate a pressure profile acting on said sensing layer based on said at least one electrical property determined (**Pressure Measurement Method, one electrode is selected and a second is selected from the remaining electrodes, this is the method that EIT follows**).

Considering claim 2, Fulton discloses that said control unit comprises means for evaluating said pressure profile using a tomography imaging method (**Abstract, Title**).

Considering claim 3, Fulton discloses that said at least one electrical property comprises the electrical impedance of said sensing layer (**Abstract, Title, Pressure Measurement Method**).

Considering claim 4, Fulton discloses that said at least one electrical property comprises the electrical resistance or conductance of said sensing layer (**Abstract, Title, Pressure Measurement Method**).

Considering claim 5, Fulton discloses that said sensing layer comprises a rubber material having an internal electrical impedance which varies in dependence with a deformation of the material (**Pressure Measurement Method**).

Considering claim 12, Fulton discloses a method for the detection of seat occupancy in a vehicle seat, the method comprising:

- employing a sensing layer associated to a seating surface of the vehicle seat, said sensing layer having at least one electrical property varying in response to a pressure and/or deformation applied to said sensing layer **(Abstract; Pressure Measurement Method)**;
- determining said at least one electrical property of said sensing layer between pairs of different locations situated only at a periphery of a sensing area **(Pressure Measurement Method, 28 on the periphery)**;
and
- evaluating a pressure profile acting on said sensing layer based on the determined electrical property values **(Pressure Measurement Method)**.

Considering claim 13, Fulton discloses that said step of evaluating said pressure profile uses a tomography imaging method **(Abstract, Title)**.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fulton et al. (NPL - Body-Support Pressure Measurement Using Electrical Impedance Tomography) in view of Scher et al. (U.S. Patent 7,066,376).

The invention by Fulton fails to disclose that the sensing layer is foam material having internal electrical impedance that varies in dependence with deformation of the material.

6. However, Scher teaches a foam material having internal electrical impedance that varies in dependence with deformation of the material (**Figure 2(a); Column 5, lines 30-42; Column 1, lines 14-42**).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize an foam material having internal electrical impedance that varies in dependence with deformation of the material as taught by Scher in the invention by Fulton. The motivation for doing so is that the invention by Fulton proposes the use of the sensor in the development of beds or wheelchairs, which inherently are soft and deformable; therefore, it would flow naturally that the sensor itself should be made of a soft and deformable material that acts like a cushion, such as foam.

7. Claims 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fulton et al. (NPL - Body-Support Pressure Measurement Using Electrical Impedance Tomography) in view of Schmiz et al. (U.S. Patent 6,875,938).

Considering claim 7, Fulton discloses a vehicle seat equipped with a seat occupancy detection device, the seat occupancy detection device comprising
(Abstract):

- a sensing layer associated to a seating surface of the vehicle seat, said sensing layer having at least one electrical property varying in response to a pressure and/or deformation applied to said sensing layer (**Abstract; Pressure Measurement Method**),
- a plurality of electrodes, said electrodes being associated to said sensing layer only at a periphery of a sensing area (**Pressure Measurement Method, 28 on the periphery**); and
- a control unit connected to said electrodes, said control unit being configured to select a pair of electrodes from said plurality of electrodes, determine at least one electrical property between pairs of electrodes selected from said plurality of electrodes, and evaluate a pressure profile acting on said sensing layer based on said at least one electrical property determined (**Pressure Measurement Method, one electrode is selected and a second is selected from the remaining electrodes, this is the method that EIT follows**).

The invention by Fulton suggests one form of sensing layer, but fails to disclose that the sensing area is a foil based sensing area.

8. However, Schmiz teaches:

Considering claim 7, that said sensing layer comprises:

- a first carrier foil having at least one surface covered with a resistance material;

- a second carrier foil having at least one surface comprising a plurality of areas covered with a conductive material;
- said first and second carrier foil being arranged at a certain distance from each other by means of a spacer material such that said areas covered with conductive material of said second carrier foil face said coating of resistance material of said first carrier foil (**Figure 2; Column 1, lines 19-33; Column 2, lines 39-43; Column 4, lines 40-58; Column 5, lines 38-53**).

Considering claim 8, Schimz teaches that said resistance material is printed onto said at least one surface of said first carrier foil (**Column 5, lines 51-53**).

Considering claim 9, Schimz teaches that said conductive material is printed in said areas onto said at least one surface of said second carrier foil (**Column 5, lines 51-53**).

Considering claim 10, Schimz teaches that said spacer material comprises an adhesive, which is arranged in a plurality of localized areas between said first and second carrier foil (**Column 5, lines 38-40**).

The invention by Fulton teaches a device capable of utilizing tomography methods in association with sheet of variable resistance based on levels of deformation. The tomography methods do not require that a single sheet is used so long as the electrodes are connected to a substrate that has varying resistance/conductance areas. The invention by Fulton does not disclose that the sensing area is first and second carrier foils sandwiching a resistive, conductive and spacing layers. The invention by

Schmiz teaches a pressure sensitive switching element that becomes more conductive in the localized areas of the conducting and resisting layers when an appropriate amount of pressure is applied. Because both Fulton and Schmiz teach pressure sensitive, deformable, variable resistive sensing layers, it would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute one element for the other to achieve the predictable result of sensing localized pressure variance via resistance/conductance fluctuations.

9. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fulton et al. (NPL - Body-Support Pressure Measurement Using Electrical Impedance Tomography) in view of Schmiz et al. (U.S. Patent 6,875,938) as applied to claim 10 above, and further in view of Yanai et al. (U.S. Patent 6,829,942).

The invention by Fulton, as modified by Schmiz, fails to disclose that the spacer material comprises a printable adhesive.

10. However, Yanai teaches that said spacer material comprises a printable adhesive, which is printed in a plurality of localized areas onto one of said carrier foils (**Column 6, lines 61-67**).

Therefore, it would have been obvious to replace the spacer of the invention by Fulton, as modified by Schmiz with a printable adhesive spacer as taught by Yanai. The motivation for doing so is found in the teachings of Yanai, "spacers can be formed by screen printing the thermosetting adhesive onto one of the base films, so the number

of the steps for manufacturing the pressure sensor sheet can be reduced” (**Column 6, lines 64-67**).

Response to Arguments

11. Applicant's arguments with respect to claims 1-13 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Dunlap whose telephone number is (571)270-1335. The examiner can normally be reached on M-F 9-5.

Art Unit: 2855

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (571) 272-2180. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. D./

Examiner, Art Unit 2855

August 9, 2008

/Michael Cygan, Ph.D., J.D./

Primary Examiner, Art Unit 2855